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Spring 2020

EVSC 416-102: Environmental Toxicology

Pradyot Patnaik

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Chemistry: *Spring 2020 Course Syllabus*

[NJIT Academic Integrity Code](#): All students should be aware that the Department of Chemistry & Environmental Science (CES) takes the University Code on Academic Integrity at NJIT very seriously and enforces it strictly. This means that there must not be any forms of plagiarism, i.e., copying of homework, class projects, or lab assignments, or any form of cheating in quizzes and exams. Under the University Code on Academic Integrity, students are obligated to report any such activities to the Instructor.

COURSE INFORMATION

Course Description: Toxicology, EVSC 416 is a core course designed to acquaint students to basic principles of toxicology involving many chemical and biochemical processes manifesting toxicity of an array of substances, including many industrial chemicals, pharmaceuticals, metals, pesticides, environmental pollutants and food additives in humans and animals. These courses include a wide range of topics such as, the toxic effects of substances on the target organs, mechanisms of actions, biotransformation and bioactivation reactions of toxicants in the target organs and the modifying host factors. The toxicology of various target organs in the body, such as the liver, kidney, skin, and respiratory tract would also be discussed in these courses. Also, there would be detailed discussion on the carcinogenic and teratogenic substances. Toxicologic evaluations, their guidelines including the concepts of risk and safety assessments would also be highlighted.

Number of Credits:

Prerequisites: Students must have an in-depth understanding of general chemistry.

Course-Section and Instructors

Course-Section	Instructor
Environmental Toxicology	Prof. Pradyot Patnaik
CRN 12769 - EVSC 416-002	

Office Hours: As per prior appointment

Required Textbook:

Title	Lu's Basic Toxicology
Author	Frank C. Lu and Sam Kacew
Edition	5th Edition
Publisher	Informa Healthcare
ISBN#	13-978-1-4200-9311-7

Learning Outcomes:

POLICIES

All CES students must familiarize themselves with, and adhere to, all official university-wide student policies. CES takes these policies very seriously and enforces them strictly.

Grading Policy: The final grade in this course will be determined as follows:

Exam 1	100 points
Exam 2	100 points
Project report on an assigned topic	50 points

Your final letter grade in this course will be based on the following tentative curve:

A	90 % and above	C	50 to 59 %
B+	80 to 89 %	D	40 to 49 %
B	70 to 79 %	F	Below 40 %
C+	60 to 69 %		

Attendance policy: Attendance at classes will be recorded and is **mandatory**. Each class is a learning experience that cannot be replicated through simply “getting the notes.”

Exams: There will be two exams during the semester and a project report to write on an assigned topic. The following exam periods are tentative and subject to change:

Exam 1	March, 2020
Exam 2	April, 2020
Assigned topic	May, 2020

Make-up Exam Policy: There will normally be **NO MAKE-UP EXAMS** during the semester. In the event that a student has a legitimate reason for missing a quiz or exam, the student should contact the Dean of Students office and present written verifiable proof of the reason for missing the exam, e.g., a doctor’s note, police report, court notice, etc. clearly stating the date AND time of the mitigating problem. The student must also notify the CES Department Office/Instructor that the exam will be missed so that appropriate steps can be taken to make up the grade.

Cellular Phones: All cellular phones and other electronic devices must be switched off during all classtimes. Such devices must be stowed in bags during exams or quizzes.

ADDITIONAL RESOURCES

Chemistry Tutoring Center: Located in the Central King Building, Lower Level, Rm. G12. Hours of operation are Monday - Friday 10:00 am - 6:00 pm. For further information please click [here](#).

Accommodation of Disabilities: Office of Accessibility Resources and Services (*formerly known as Disability Support Services*) offers long term and temporary accommodations for undergraduate, graduate and visiting students at NJIT.

If you are in need of accommodations due to a disability please contact Chantonette Lyles, Associate Director at the Office of Accessibility Resources and Services at 973-596-417 or via email at lyles@njit.edu. The office is located in Fenster Hall Room 260. A Letter of Accommodation Eligibility from the Office of Accessibility Resources Services office authorizing your accommodations will be required.

For further information regarding self-identification, the submission of medical documentation and additional support service provided please visit the Accessibility Resources and Services (OARS) website at:

- <http://www5.njit.edu/studentsuccess/disability-support-services/>

Important Dates (See: Spring 2019 Academic Calendar)

Course Outline

Lecture	Section	Topic	Assignment
1		Introduction to the Course, General Principles and Concepts	
2		Biotransformation, Phase I and Phase II Types Reactions	
3		Toxic Effects, Target Organs and Mechanisms of Actions	
4		Modifying Host Factors and Chemical Interactions	
5		Toxicology of Liver, Liver Diseases and Hepatotoxicants	
6		Toxicology of Kidney, and Nephrotoxicants	
7		Toxicology of Skin, Skin Diseases and Dermatotoxicants	
8		Food Additives, Occupational Toxicology & Exposure Limits	
9		<i>Exam 1</i>	

10		Toxicity of Pesticides, Enzymetic Reactions, Nerve Gases	
11		Toxicity of Metals and Miscellaneous Industrial Chemicals	
12		Carcinogenesis and Mechanisms, Human Carcinogens	
13		Teratogens and Mechanisms of Actions	
14		Toxicologic Evaluation, Risk Assessment; Course Review	
15		<i>Exam 2 and Submission of Reports on Assigned Topic</i>	
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